SEMICONDUCTOR PACKAGE WITH HEAT SINK

ABSTRACT

A semiconductor package with a heat sink is proposed, in which a chip has its first surface attached to a chip carrier, while a second surface of the chip is attached to a heat sink through an adhesive, allowing heat generated by the chip to be transmitted to the heat sink. Moreover, in a molding process, a molding resin is used to form an encapsulant for encapsulating the chip, while a top surface and side surfaces connected to the top surface of the heat sink are exposed to outside of the encapsulant, that is, the heat sink merely has its bottom surface bonded to the encapsulant. This makes the generated heat directly dissipated to the atmosphere through the heat sink. Furthermore, the top surface of the heat sink is coated with an interface layer, while adhesion between the interface layer and the molding resin is smaller than that between the heat sink and the encapsulant. This allows the molding resin remained on the interface layer to be easily removed after completing the molding process, while delamination can be prevented from occurrence between the heat sink or the chip and the encapsulant, and also the chip can be prevented from cracking due to clamping force generated during molding.

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